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ABSTRACT

Focusing on the use of the interview in the Procedures for Adopting Educational Innovations (PAEI) Project, this paper reports on the appropriateness of the interview as a research tool in change research and the types of information appropriate to its use. In this project, interviews are used to identify what an individual is doing, has done, or plans to do regarding an innovation. Interviews have been used to determine levels of use (LOU) of the innovation (whether and how the innovation is being used). Results of testing with three different raters demonstrated that reliability of these self-reports is high. Correlation of interview results with ethnographic observations also resulted in a high correlation. In the PAEI Project, interviews also are important for measuring configurations (variations or modification) of an innovation. Because users will be reporting unique ways of using the innovation, the combination of a focused and open-ended interview is necessary. In order to determine which interventions have influenced the successful adoption of an innovation, an additional interview technique that combines the open-ended and the focused interview is being developed. PAEI researchers have concluded that the interview is a valuable research tool that can be an effective means of collecting needed data. (Author/JM)

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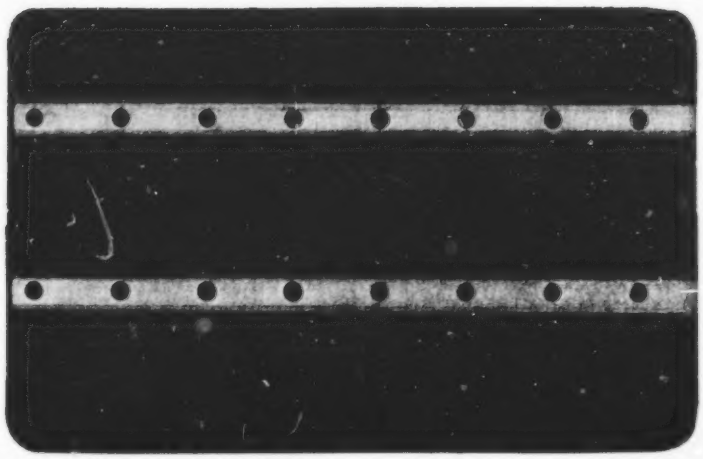

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THE PERSONAL INTERVIEW: A TOOL FOR INVESTIGATING AND UNDERSTANDING CHANGE IN SCHOOLS

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THE PERSONAL INTERVIEW: A TOOL FOR INVESTIGATING AND UNDERSTANDING CHANGE IN SCHOOLS[1]

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Change seems to be one of the constants in schools today. New programs are regularly introduced into schools or current ones are revised. If programs are not being changed, children are being grouped in new ways, grade levels within schools are modified, a new school building with a drastically different design is opened, teachers within a building are organized differently, or legislative or judicial action requires significant change in the operation of schools. Billions of dollars and untold amounts of teacher time and effort have been expended over the past two decades in these efforts to change and improve education in America. Unfortunately, the result from these efforts has been disappointing.

In recent years research efforts have been launched to determine why the money and effort spent to improve American education has had such limited impact. At the Research and Development Center for Teacher Education the Procedures for Adopting Educational Innovations Project (PAEI) has joined in this effort with a nationwide study of change in schools and universities.[2]

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[1]Paper presented at the annual meeting of the American Educational Research Association, Toronto, March 29, 1978.

[2]The research described herein was conducted under contract with the National Institute of Education. The opinions expressed are those of the author and do not necessarily reflect the position or policy of the National Institute of Education, and no endorsement by the National Institute of Education should be inferred.

This research has led to the development of new instruments and techniques that can be used in the diagnosis of the needs of individuals as they participate in the process of change. Furthermore, findings from the PAEI research are making a valuable contribution to our knowledge of what happens to people, programs and institutions as they engage in the process of change.

The personal interview is a key technique used to gather data for the PAEI Project. The appropriateness of the interview as a research tool in change research and the types of information that may be gathered with it are reported in this paper.

The Use of Interviews in Change Research

Use of interviews in research is certainly not new or novel; they have been used in research for more than forty years (Weiss, 1972). During this period, interviews have been used principally in three ways. Social scientists have used them in survey studies to determine the attitudes, opinions and practices of groups of people. A second use of the interview has been for evaluation purposes, to ascertain to what extent a program is succeeding or failing. A final use of the interview has been in the area of counseling where diagnostic information of a psychological nature is sought.

Interviews that have been developed and used in the PAEI Project in its research on change actually represent a fourth category since they are not conducted for any of the above purposes. Whereas survey research is intended to describe large groups, PAEI research focuses on the individual and even when information from a group of individuals is considered, the focus remains on the individual. PAEI interviews are always designed to be diagnostic in nature and to this extent they are similar to the counseling interview but in one very significant way they are unlike the psychological diagnosis. Interviews in the change process are not intended to identify an individual's problems, as are counseling interviews. Rather, a diagnosis in PAEI research means an identifica-

tion of what a person is doing, has recently done and plans to do regarding an innovation. Findings from LoU interviews are not judged as good or bad or right or wrong. They simply indicate an individual's behavior relative to an innovation at any point in time.

To be sure, interviews in change research are not evaluative as are interviews in evaluation research. Whatever a person's status is regarding an innovation is deemed to be acceptable for that person at that time. Diagnostic information gained through interviews and other means provides a basis for subsequent assistance to an individual that will make his or her use of an innovation easier and more effective.

During the course of its research the PAEI Project has conducted more than 3,500 personal interviews for a variety of purposes. This project has clearly demonstrated the value of the personal interview as a research tool. There are several reasons for its success as a research tool. First, the individual is truly the key person in the change process and through an interview the personal perceptions of each individual can be secured. Secondly, the flexibility of the interview makes it possible to obtain both breadth and depth of information. Thirdly, by deciding in advance the information desired, the interview can produce the precise information needed for diagnosis and prescription. Finally, the interview is a very personal technique in a research world that is frequently very impersonal. During the course of the interviewing conducted by the PAEI staff, many teachers have expressed appreciation (many others surprise) for someone taking time to talk to them about what they were doing in their work.

The PAEI Project

The Four Areas of Research

Four years of research on change have resulted in the initial verification of two major dimensions of the Concerns-Based Adoption Model (CBAM), a model that

views change as a process, not as an event, and the individual user of the innovation as the most important variable in the process. With its focus on the individual, the model describes two dimensions of individual growth; changing concerns about the innovation and changes in the way the innovation is actually used. In addition to research on these two dimensions, the PAEI Project is also conducting research on configurations and interventions, two other significant variables in the change process. Personal interviews have been used extensively in these research efforts and found to be a very useful means for collecting data.

Levels of Use of the Innovation (LoU) represents a major dimension of the CBAM. Levels of Use describes how performance changes as the individual becomes more familiar with an innovation and more skillful at using it (Figure 1). Individuals begin with "orienting" themselves to the innovation. Normally, they first use an innovation at a "mechanical" level; their planning is short-term, and their organization and coordination of the innovation are disjointed. As experience and support increase, innovation users move to a "routine" Level of Use and eventually may reach various "refinement" levels, where they make changes based on the needs of their students. A specially developed interview process is used to collect the information needed for rating LoU.

Another major dimension of the CBAM, Stages of Concern About the Innovation (SoC), describes seven kinds of concerns that individuals experience at various times in the change process (Figure 2). These range generally from early concerns about "self" (How will the innovation affect me?), through concerns about "task" (How can I best manage the innovation?), and finally through concerns about "impact" (How does the innovation affect my students?). SoC data is typically collected through the use of an SoC Questionnaire (Hall, George and Rutherford, 1977) rather than interview.

Initially, PAEI research focused on the development of reliable and valid

Figure 1

Levels of Use of the Innovation[3]

0 NONUSE: State in which the user has little or no knowledge of the innovation, no involvement with the innovation, and is doing nothing toward becoming involved.

Decision Point A Takes action to learn more detailed information about the innovation

I ORIENTATION: State in which the user has recently acquired or is acquiring information about the innovation and/or has recently explored or is exploring its value orientation and its demands upon user and user system.

Decision Point B Makes a decision to use the innovation by establishing a time to begin.

II PREPARATION: State in which the user is preparing for first use of the innovation.

Decision Point C Changes, if any, and use are dominated by user needs.

III MECHANICAL USE: State in which the user focuses most effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet user needs than client needs. The user is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use.

Decision Point D-1 A routine pattern of use is established.

IVA ROUTINE: State in which use of the innovation is stabilized. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences.

Decision Point D-2 Changes use of the innovation based on formal or informal evaluation in order to increase client outcomes.

IVB REFINEMENT: State in which the user varies the use of the innovation to increase the impact on clients within immediate sphere of influence. Variations are based on knowledge of both short- and long-term consequences for clients.

Decision Point E Initiates changes in use of innovation based on input of and in coordination with what colleagues are doing.

V INTEGRATION: State in which the user is combining own efforts to use the innovation with related activities of colleagues to achieve a collective impact on clients within their common sphere of influence.

Decision Point F Begins exploring alternatives to or major modifications of the innovation presently in use.

VI RENEWAL: State in which the user reevaluates the quality of use of the innovation, seeks major modifications of or alternatives to present innovation to achieve increased impact on clients, examines new developments in the field, and explores new goals for self and the system.

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[3]Excerpted from: The LoU chart: Operational definitions of Levels of Use of the Innovation. Austin: Research and Development Center for Teacher Education, The University of Texas, 1975.

Figure 2

Stages of Concern About the Innovation[4]

0 AWARENESS: Little concern about or involvement with the innovation is indicated.

1 INFORMATIONAL: A general awareness of the innovation and interest in learning more detail about it is indicated. The person seems to be unworried about himself/herself in relation to the innovation. She/he is interested in substantive aspects of the innovation in a selfless manner such as general characteristics, effects, and requirements for use.

2 PERSONAL: Individual is uncertain about the demands of the innovation, his/her inadequacy to meet those demands, and his/her role with the innovation. This includes analysis of his/her role in relation to the reward structure of the organization, decision making and consideration of potential conflicts with existing structures or personal commitment. Financial or status implications of the program for self and colleagues may also be reflected.

3 MANAGEMENT: Attention is focused on the processes and tasks of using the innovation and the best use of information and resources. Issues related to efficiency, organizing, managing, scheduling, and time demands are utmost.

4 CONSEQUENCE: Attention focuses on impact of the innovation on students in his/her immediate sphere of influence. The focus is on relevance of the innovation for students, evaluation of student outcomes, including performance and competencies, and changes needed to increase student outcomes.

5 COLLABORATION: The focus is on coordination and cooperation with others regarding use of the innovation.

6 REFOCUSING: The focus is on exploration or more universal benefits from the innovation, including the possibility of major changes or replacement with a more powerful alternative. Individual has definite ideas about alternatives to the proposed or existing form of the innovation.

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[4]Original concept from Hall, G.E., Wallace, R.C., Jr., & Dossett, W.A. A developmental conceptualization of the adoption process within educational institutions. Austin: Research and Development Center for Teacher Education, The University of Texas, 1973.

means for identifying LoU and SoC. To accomplish this, data were collected from hundreds of teachers and professors in schools and universities in thirteen states through the use of questionnaires and personal interviews. As this was being accomplished a previously unrecognized factor in the change process emerged. In each innovation studied it was found that users modified the original innovation in a variety of ways. Because the adaptations or "configuration" of an innovation appears to be of significance in the process of innovation implementation, the PAEI Project has developed a procedure for identifying and measuring innovation configurations (Hall & Loucks, 1978). Personal interviews are an important part of this procedure for determining configurations.

The newest area of research in this project focuses on interventions. To understand and effectively guide the change process it is necessary to know what actions or events (interventions) occur that influence use of the innovation and how they influence use. Although our research in this area has only recently begun, it is apparent that personal interviews will again be a useful tool in collecting essential data.

PAEI Interviews

Several different types of interviews have been used in the PAEI Project to collect data.

Levels of Use of the Innovation Interviews. Levels of Use (LoU) was described above as one of the key dimensions of the CBAM. When conducting research on educational change it is very important to know whether or not the innovation under study is actually being used, and if so, how it is being used. Without this information conclusions drawn about the effectiveness of an innovation may be inaccurate and misleading (Hall & Loucks, 1977).

The CBAM identifies and operationally defines eight Levels of Use of the Innovation. The content of this dimension is what individuals are actually

doing in relation to the innovation, not how they feel about it. Behaviors may range from nonuse to sophisticated use. The eight Use levels have been operationally defined using eight Decision Points (Figure 1) and seven categories of innovation user behavior (Hall, Loucks, Rutherford & Newlove, 1975).

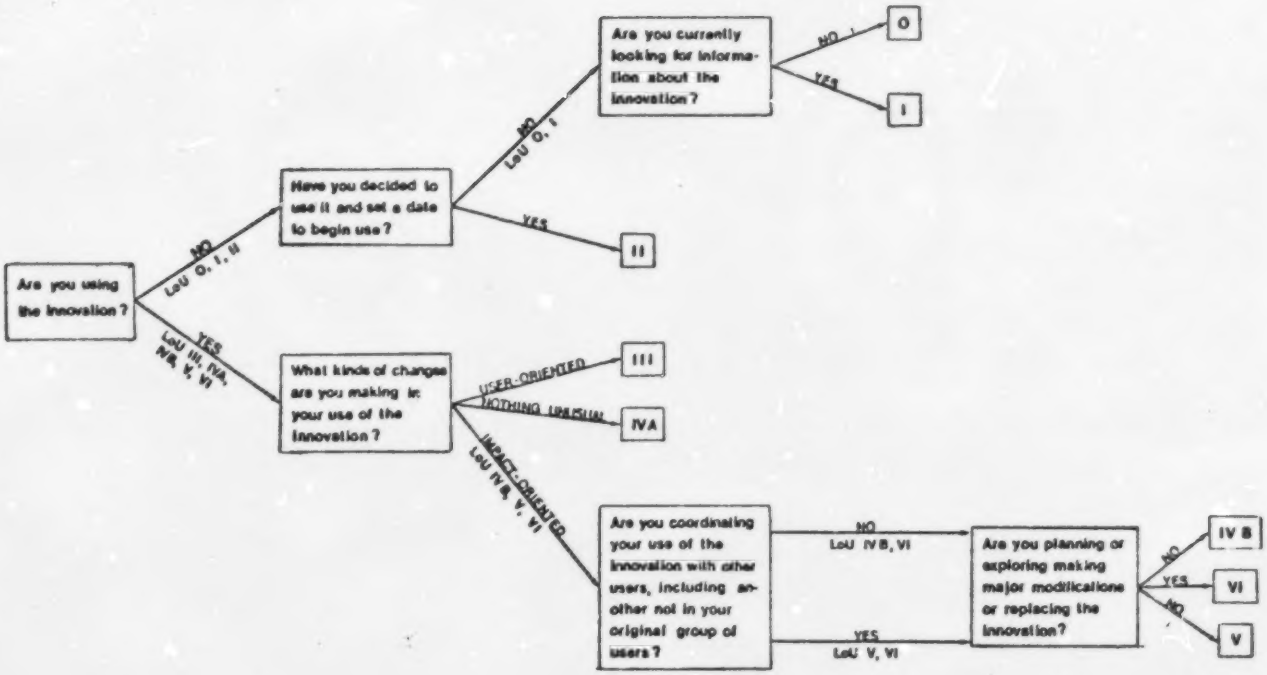
To identify an individual's level of use a focused interview (Merton, Fiske & Kendall, 1956) is used that employs a branching format (Figure 3) with specific questions and follow-up probes. In this focused interview there are certain kinds of information that must be obtained to assign an individual to a specific Level of Use. Specific questions are identified for use in securing this information. However, unlike a standardized interview (Maccoby & Maccoby, 1954) the wording of the questions need not be maintained exactly nor must the order of the questions be absolute. A variety of follow-up probes may be used to clarify or extend responses. Within the interview open-ended questions are not used but the focused questions do permit open-ended responses.

The LoU interview procedure is generic, that is, it can be used with different innovations simply by changing the frame of reference. For each innovation, a basic definition including descriptive characteristics is developed. The degree to which the interviewee adheres to these characteristics is the basis for determining whether a person is a user or nonuser. Accomplishing this is the first step in the LoU interview. Once this has been done the interviewer must seek information related to the overall level of use, the decision points which separate each level (Figure 1), and categorical information that represents additional data points within a level. Although specific interview questions and probes are used to secure the needed information, there is enough flexibility within the questions to allow the interview to be conducted in a casual, conversational manner rather than as an interrogation.

For those who are nonusers, questions are asked to determine what knowledge

Figure 3

Overview of Branching Format of the LoU Interview[3]



[3] From: Loucks, S. F., Newlove, B. W., & Hall, G. E. Measuring Levels of Use of the Innovation: A manual for trainers, interviewers, and raters. Austin, Tex.: Research and Development Center for Teacher Education, the University of Texas, 1976.

and understanding of the innovation they have and if they are attempting to learn more about it. The interviewer must also learn if the individual is planning to use the innovation in the future.

Within the nonuser levels there are some significant differences that can be very important to those who are guiding the change effort. A change facilitator would certainly offer a different kind of assistance to the individual who has little or no involvement with the innovation (LoU 0) and the person who is making preparations to begin use in the very near future (LoU II).

For those who are users, the interviewer must determine how they are using the innovation at the time of the interview, what recent changes they have made in their use, if any, what plans they have regarding the innovation, and to what extent they are collaborating with others in use. This information coupled with certain categorical information makes it possible to assign an overall LoU rating. Users may range in their rating from LoU III to LoU VI and, as in the case of nonusers, users at each level may need a different kind of assistance or attention from a change facilitator.

A question is often raised about the reliability of "self report." As a part of the development of the LoU interview reliability and validity questions were addressed. Tape recordings were made of 1,381 LoU interviews concerning three different innovations, team teaching, Science Curriculum Improvement Study (SCIS) in public schools and instructional modules in universities. Two raters listened to each tape and independently classified the interviewee according to overall Level of Use. A third independent rater rated those tapes where there was disagreement between the first two raters. In these cases agreement of the third rater with one of the other raters determined the overall LoU. In only 8% of the cases was there no agreement among the three raters. When this happened the tape was submitted to the staff for analysis. Inter-rater reliabilities obtained by using the ratings of the first two raters, regardless of agreement,

ranged from .87 to .96 on overall Level of Use.

These statistics were impressive and encouraging but there was still a major unanswered question. Was the interview valid? Was the information teachers and professors gave during the interview an accurate description of their behavior in relation to the innovation? To determine the validity of the LoU interview a study of teachers who were teaching a science program (ISCS) was conducted. Forty-five teachers were interviewed and LoU determined. From this group seventeen teachers were chosen to be observed in their classrooms. Two teachers were selected at each LoU level (when possible) and additional teachers were added at extreme LoU's (0, I, V, VI).

Acting as ethnographers, PAEI staff members spent an entire day with each of the seventeen teachers selected. The ethnographers had no knowledge of interviewer ratings. The task of the ethnographer was to collect all information necessary and available to assign the teacher a Level of Use for the ISCS curriculum. A written protocol was produced for each teacher. This protocol included:

1) a detailed description and diagram of the classroom

2) a running account of all activities, interactions, and teacher and student behaviors that occurred during a full class period

3) a summary of their interactions, activities, teacher behaviors, comments and informal discussions held with the teacher during the day that related to ISCS.

A comparison of ethnographer ratings of overall LoU with interviewer ratings of overall LoU resulted in a .98 correlation. Apparently the LoU interview does accurately reflect individual's actual behaviors. Certainly the interview is a much less expensive means of identifying LoU behaviors than is extended observation.

Configuration Interviews. Apparently there does not exist an innovation that cannot and will not be modified by those who use it. These innovation modifications or patterns that are arrived at by users have been termed configurations

in the PAEI Project. Configurations occur not only between institutions but also among individual users within a single institution. While conducting LoU interviews on team teaching with more than 400 teachers in 39 schools in three states it became apparent that there were a number of patterns of teaming. Nine distinct configurations were identified. More recently a specific study of the configurations of a criterion-referenced mathematics curriculum was conducted with 168 teachers in grades 2, 4, and 6 in 19 schools. Eight distinct configurations of that innovation were identified.

Identification of configurations of innovations is essential in change research for several reasons. In the first place, determination of users versus nonusers of an innovation is often dependent on an analysis of configurations. In both the teaming and mathematics sample there were teachers who stated they were using the innovation but careful questioning revealed that what they were doing did not actually constitute use.

A second important reason for identifying configurations is so that those who are responsible for managing the change effort will know exactly how individuals are using the innovation. Attempts to assist users with implementation of an innovation can be futile and frustrating if they are directed at what teachers are assumed to be doing rather than what they are actually doing with the innovations.

Both of the above issues have significant implications for program evaluators. Any attempt to evaluate impact of an innovation without first distinguishing between users and nonusers and then identifying the configurations of the innovation and their importance is a study without validity from the very beginning.

A process is being developed which results in a useful and practical checklist evaluators and/or staff developers can use to identify and measure configurations. This process relies heavily upon a personal interview.

One step is to ascertain how users (and intended users) are actually using the innovation. To acomplish this a focused interview process is used. In this type of interview the interviewer knows the various components of the innovation the developer and/or facilitators consider to be important. Specific questions must be asked of users that will make it possible to know which of the designed components are being used and how they are used. This focused part of the interview can be enhanced by the use of a checklist that sets out in an organized way the developer components that are to be asked about in the interview. Such a checklist not only serves as a useful guide for the interview, it provides a handy tool for recording information.

A second use of the configuration interview is to find out what the user is doing with the innovation that was not a part of the original innovation design. Information that will be forthcoming during this part of the interview cannot--and should not--be predicted in advance so there must be an opportunity, and encouragement, for users to give a full description of how they are using the innovation. Because some people do not respond well to open-ended questions probes should be developed in advance that will cause respondents to reflect on the general dimensions of the innovation.

In an effective configuration interview the focused and open-ended aspects of the interview will be integrated in a way that makes the two almost indistinguishable.

Whether the focused and open-ended aspects of the interview are integrated or separated, the important purpose of the interview is to find out how the users are using the developer components of the innovation and what they are doing otherwise. Research already completed makes it clear that developers and users often have two different perspectives about the significant aspects and expectations of an innovation.

Unlike the LoU interview, the configuration interview is not generic. For each innovation a separate interview must be designed that relates to the specific characteristics of that innovation.

Interviews for Studying Interventions. Studying interventions is a third way an interview can be used in change research. Currently the PAEI Project is grappling with the problem of analyzing and understanding interventions.

During the process of implementing an innovation many actions are taken with the intention of influencing innovation use by individuals or groups. These actions may range from something as small as a personal word of praise, to a memo from a principal, to inservice efforts that focus on one aspect of the innovation, to large-scale training that details the plan of action users are to follow in implementing and using the innovation. Our investigations of interventions has led us in pursuit of two major questions about interventions. First, there is an effort to determine what kinds of actions and events actually do have an influence on use of an innovation. Many times actions are taken, i.e. inservice training, for the purpose of having some kind of specific impact on the users and their use of the innovation but very little is known about what kind of actions have what kind of effects, if any.

To investigate the first problem we have found it necessary to try and develop a framework or taxonomy that permits a consistent and systematic classification and analysis of intervention. Without such a system it seems highly improbable that any kind of useful or reliable research can be conducted on interventions nor can the selection and utilization of interventions in change efforts be accomplished in a planned, systematic manner.

Investigation of both aspects of interventions are now underway and one of the tools being used is the personal interview. In this research effort a combination of open-ended and focused interview have been used. Whereas the configuration interviews were at first focused and later open-ended, the intervention interview

was first open-ended and later focused. Like the configuration interview, the intervention interview is not generic but specific questions must be developed for each innovation.

Teachers in two school districts using different innovations were interviewed in an attempt to find out what interventions had influenced their use. In one district at the close of the first year of implementation efforts an initial attempt at intervention interviewing was made at the close of an LoU interview when teachers were asked if they could describe any person or events during the year that had influenced their use of the innovation. In response to this question only a limited number of interventions were even mentioned by the teachers and of those that were mentioned there was no particular pattern. While little useful information was generated out of this effort it did reveal that securing intervention information might be more difficult than had been anticipated.

During the second year of the implementation effort a second attempt was made to collect intervention data. This time a slightly different procedure was used. Teachers were told we were attempting to discover as much as we could about the things that had happened over the last 18 months that had in any way influenced their use of the innovation. An open-ended invitation to share such information followed.

Following this invitation each teacher was asked about the influence of two activities that were known to have occurred. One activity was an inservice workshop at the beginning of the second year, the other was a six-month effort on the part of the entire faculty to arrive at an agreeable philosophy of discipline for the school.[4]

A third step was to name several other interventions (or supposed interventions) that were known to have occurred and ask the teachers how those had

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[4]Ethnographic data plus data from LoU interview were collected throughout the research study so there was a great deal of information known about all the activities and actions that were being taken in relation to the implementation of the innovation.

influenced their use. This time more information on interventions was obtained but it was still too little and too diffuse to offer any real answers to the two interaction problems under investigation.

In a second district a number of schools and teachers were involved in their third year of use of an innovation. As a part of interviews to determine configurations, teachers were asked why they had made the changes they did. As was the case in the first district, these teachers contributed only limited information about specific interventions, so little that no conclusions could be drawn.

Teachers in both districts seemed to view changes which they had made more as a decision of their own resulting from changes in the teaching environment (e.g., an increase in class size), rather than as a result of efforts planned by others to influence them.

Although the interview data have not answered all our intervention questions, these interviews have provided new insights into how teachers view change in their professional lives. With these insights, new, and hopefully improved, interview techniques are being developed. We are confident that the personal interview along with other tools, such as ethnography, will eventually provide answers to those important questions about interventions.

Summary

This report has described how the personal interview can be used productively as a tool in research on the process of change in schools and universities. It is true that personal interviews will always be plagued by the problems of reliability and validity. It is also true that interviews cannot provide all of the information that is needed to change research. The PAEI Project has demonstrated, however, that reasonable reliability and validity can be established for certain types of interviews. It has also shown that the interview is a valuable research tool that can be an effective means of collecting needed data.

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